

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

FIG. 1A

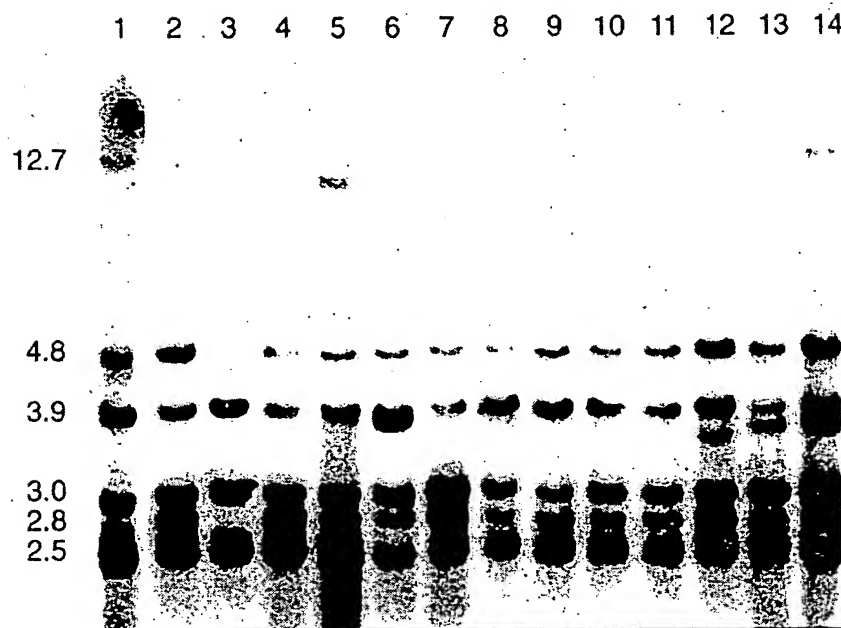


FIG. 1B

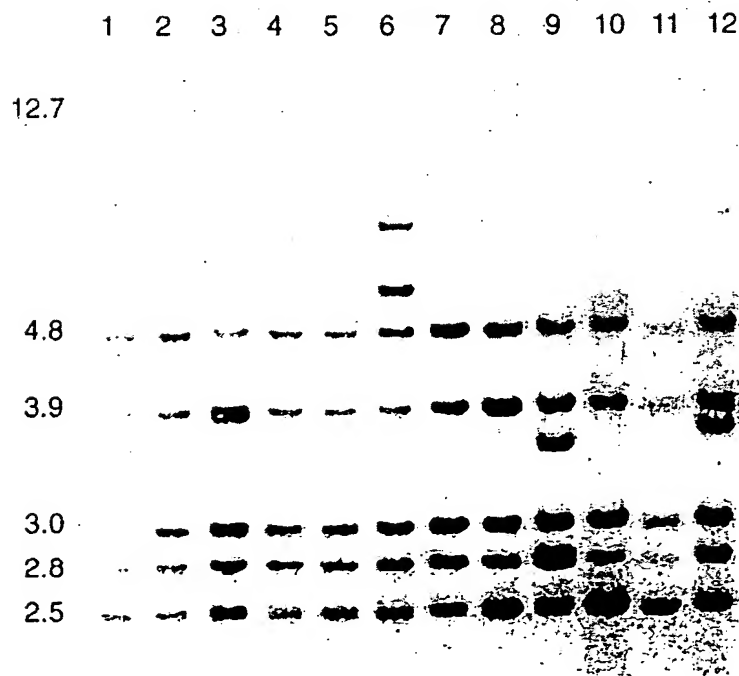


FIG. 2C

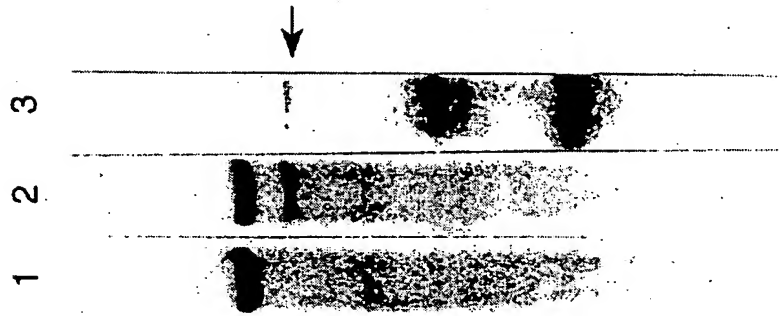


FIG. 2B

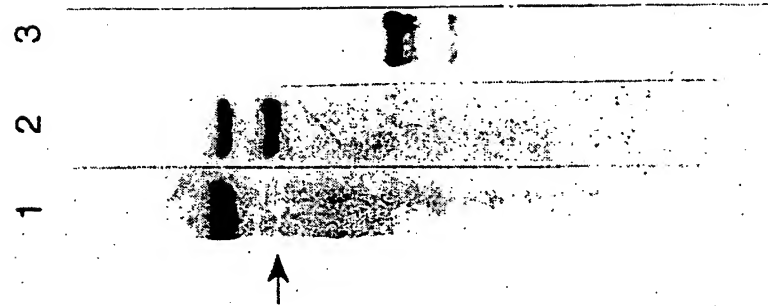


FIG. 2A

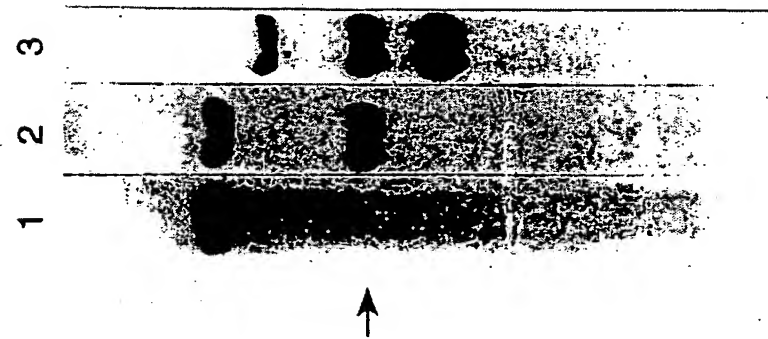


FIG. 3

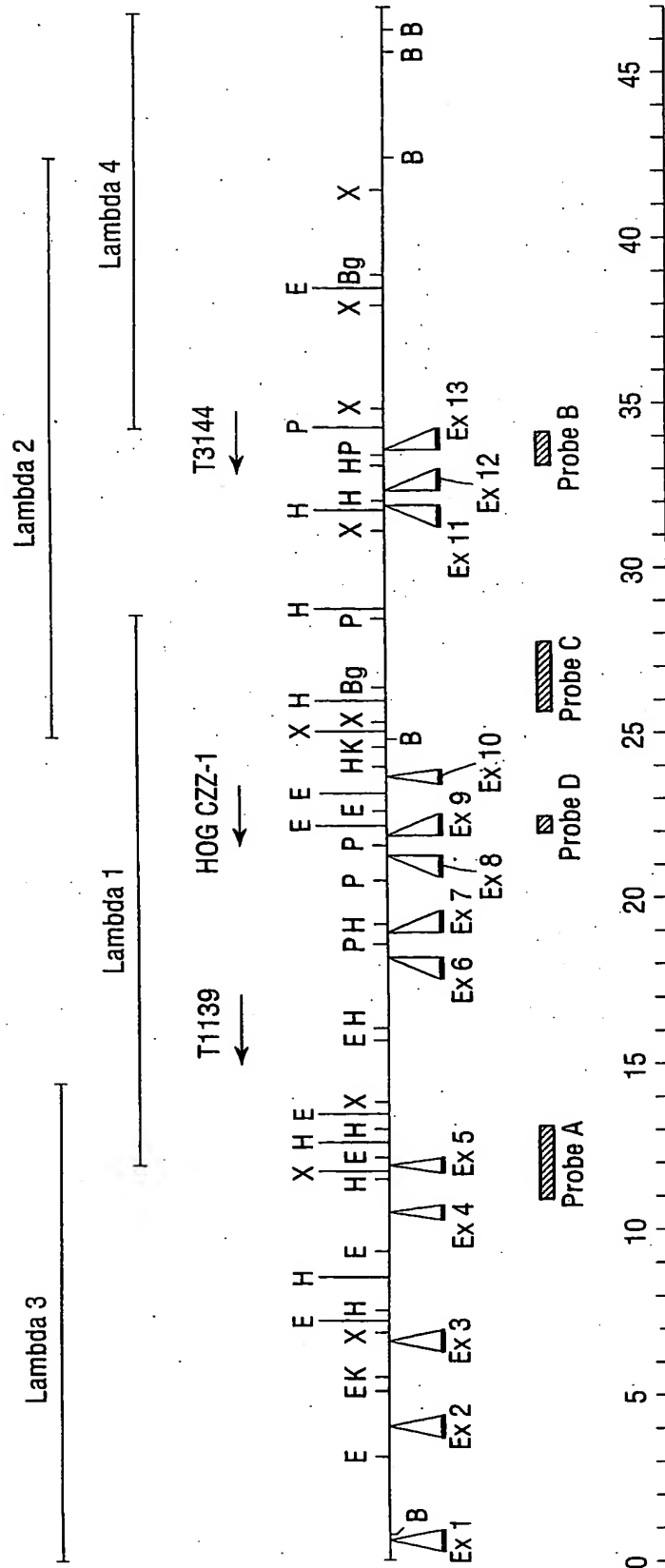


FIG. 4

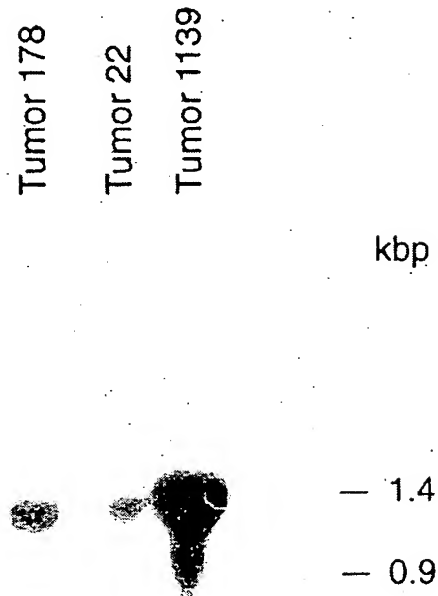


FIG. 5A

10 30 50 70 90
AACAAAGCGCTCCTTTTCCCCCGGCAAGATGGCGGAGTACGACCTGACTACTGCATCGGCATTTTCTGGATCGGCACCTGGTCTTTCCGCTTCTTGAGTTT

110 130 150 170 190
CTCTCTGTGAAGAGATTTATAATGAAAAAGAAATTATTACAAGGAAATTAGATCTTCTTAGTGATACCAATATGGTGGACTTTGCTATGGATGTTTACA
M V D F A M D V Y K

210 230 250 270 290
AAAACCTTTATTTCTGATGATATCCCTCCTGCTTTTGAGAGAAAAAGAACCAACAGTTGTTGCGCAGCTGAAACAGCTCCAGGCAGAAAAACAGAACCAATTGT
N L Y S D D I P H A L R E K R T (T) V V A Q L K Q L Q A E T E P I V

310 330 350 370 390
GAAGATGTTTGAAGATCCAGAACTACAAGGCAGATGCAGTCAACAGGGATGGCAGGATGTTTATTTGACTACCTGGCAGACACAAACATGGGTTTAGGCAA
K M F E D P E (A) T R Q M Q (S) T R D G R M L F D Y L A D K H G F R Q

410 430 450 470 490
GAGTACTTAGATACACTCTACAGATACGCAAAATTCAGTATGAGTGTGGAATTAATCTGAGCTGCAGAGTATCTTTACTTCTTTAGAGTTTGGTCC
E Y L D T L Y R Y A K F Q Y E C G (N) Y S G A A E Y L Y F F R V L V P

510 530 550 570 590
CAGCAACAGATAGAAATGCTTTAAGTTGCTCTGGGGGAAACTGGCCTCTGAAATCTTAATGCAGAAATGGGATGCAGCCATGGAAGACCTTACTCGATT
A (A) D R N A L S S L W G K L A S E I L M Q N W D A A M E D L T R L

610 630 650 670 690
AAAAGAAACCATAGACAATAATTCTGTGAGTTCTCCACTCCAGTCTCTTCAGCAGCGAACAATGGCTCATTTGCTCTCTATTTGTTTTCACCAACCAT
K E T I D (N) N S V S S P L Q S L Q Q R T W L I H W S L F V F F N H

710 730 750 770 790
CCAAAGGCCGTGATAACATTATTGATCTCTCTTCCCTTTACCAACACAGTATCTTAATGCAATTCAGACAATGTCTCCACATATTTCTACGCTATTGACTA
P K G R D N I I D L F L Y Q P Q Y L N A I Q T M C P H I L R Y L T T

FIG. 5B

810 830 850 870 890
CTGCCGTCAATAACCAAGATGTGCGGAACGCCGGCAGGTGCTGTAAGATCTGGTGAAGTGAATCAACACAGAGTCTTACACATATAAAGACCCCAAT
A V I **T** N K D V R K R Q V L K D L V K V I Q Q E S Y **T** Y K D P I

910 930 950 970 990
TACAGAAATTTGTTGAATGCCCTATATAGTTAACTTTGATTTTACGGGGCTCAGAAAAAGCTGAGAGAAATGTGAATCAGTGCCTCGTGAATGACTTCTTCTCCTG
T E F V E C L Y V N F D F D G A Q K K L R E C E S V L V N D F F L

1010 1030 1050 1070 1090
GTAGCGTGTCTGGAGGACTTCATTGAGAAATGCCCGTCTCTTCATATTTGAGACGTTTGTGCTATCCACCAGTGTATCAGCATTAATATGTTAGCAGATA
V A C L E D F I E N A R L F I F E T F C R I H Q C I S I N M L A D K

1110 1130 1150 1170 1190
AACTGAATATGACTCCAGAAGAAGCTGAAGATGGATTGTGAATTTGATTAGAAATGCGAGGTTGGATGCCAAAGATTGATTCTTAACTAGGTCATGTGGT
L N M **T** P E E A E R W I V N L I R N A R L D A K I D S K L G H V V

1210 1230 1250 1270 1290
AATGGCAACAATGCAGTCTCGCCCTACCAAGCAAGTGAATGAAAAGACCAAAAGCCCTTTCTTTTGAAGCCCAAATGTTGGCCATGAATATTGAAAAGAAA
M G N N A V S P Y Q Q V I E K T K S L **S** F R S Q M L A M N I E K K

1310 1330 1350 1370 1390
CTTAATCAGAACAGTAGATCAGAGGCTCCCAACTGGCAACCCCAAGACTCTGGCTTCTATTAAAGGATTATAAAGAAAAGAAAAGGAATAAGTGAA
L N Q N **S** R S E A P N W A T Q D S G F Y

1410 1430 1450 1470 1490
AGACACAGTAGCCATTGTGTATAAAGGATGACATACATTTTGAAGCAATTAACATGTTTGCTACAAATTTTGGAGAAATTTGAATAAAATTTGGCTATGA
TTAA 1504

FIG. 6

C. elegans
Drosophila
Xenopus
Chicken
Mouse
Human

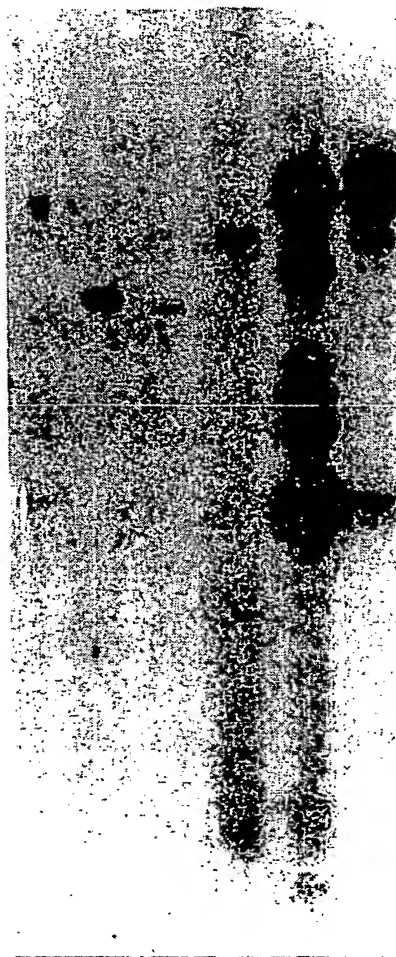


FIG. 7A

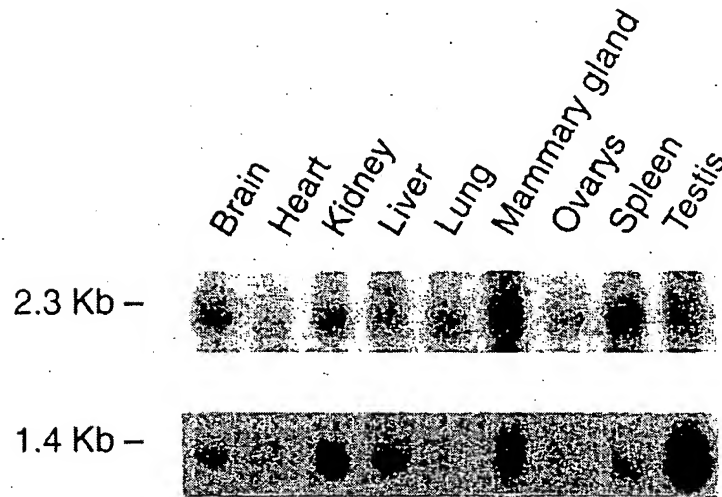


FIG. 7B

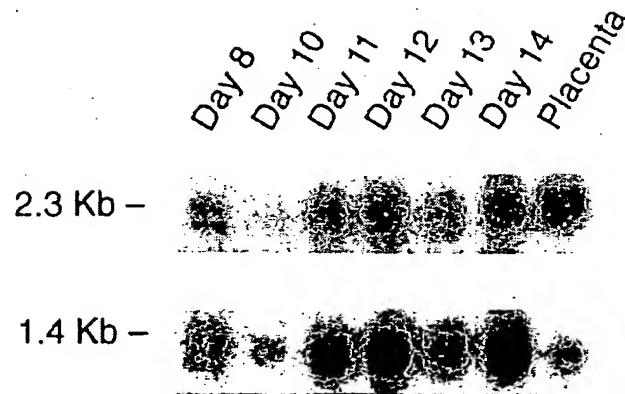


FIG. 8

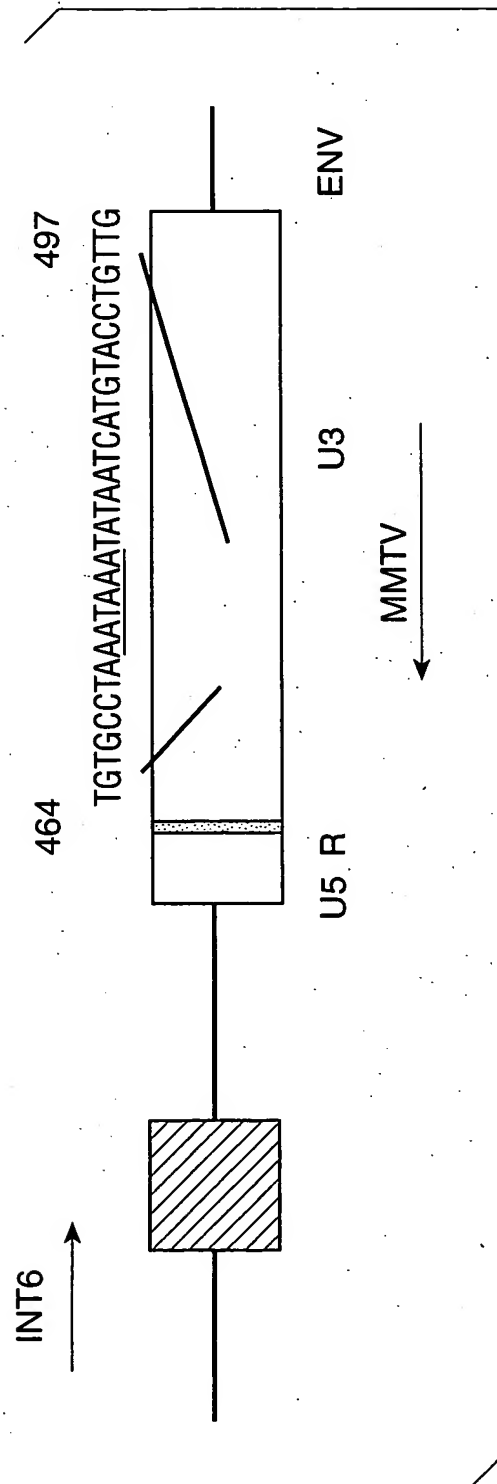


FIG. 9A

TUMOR 1139

350

GATGGCAGGATGTTATTGACTACCTGGCAGACAAACATGGGTTTAGGCAAGAGTACTTA
 1 D G R M L F D Y L A D K H G F R Q E Y L
 2
 GATACACTCTACAGATACGCAAAATTCACAGTATGAGTGTGGAAATTACTCTGGAGCTGCA
 1 D T L Y R Y A K F Q Y E C G N Y S G A A
 2

498

GAGTATCTTTACTTCTTTAGAGTTTGAattgaagatgtattgactgtcaatggcatatt
 1 E Y L Y F F R V L N *
 2
 agaacctttaacagcactttcccatcatgcacagCTGCCGCAGTCGGCCGACCTGAGGGGCC
 1 - - - - - L P Q S A D L R A
 2 ACCGGGTCTGCGGGGGACCCCTCTGGAAGGTAATGGATAAGTGACGAGCGGAGACGGGA

T G V C G G T L W K V M D K *

TGGCGAACAGACACAAACACACGAGAGACGAATGTTAGGACTGTTGCAAGTTTACTCAA
 1 AATCAGCACTCTTTATATCATGTTTACATAAGCATTTACATAAGACTTGGATAGATTCC
 2 AAAAGAACATAGGAGGTAGAACACTCAGAGCTTAGATCAAAACATTTGATACCAAAACCA
 GGTCAGGAAACCACTTGTCCTCACATCCTTGTTTTAAAGAACAGTTTGTAAACCATGAAATTA
 TTTGAACCTTGGGAACCGCAGCAATACCTTAATATGTATCATATAACAGTCAGAGGTATG
 CCTTAATATGTTTTTATATATGTTCTTTTGGCCCTCTTCCCTTACTTTTAGGATTTATCTCC
 AATGTTTTATCCCTGTGCCTAAATAAA

FIG. 9B

TUMOR 22

877

	GAGTCTTACACATATAAAGACC	CAATTACAGAAATTTGTTGAATGCC	TATATGTTAACTTT
1	E S Y T Y K D P I T E F V E C L Y V N F		
2	. . . . .	. . . . .	. . . . .
3	. . . . .	. . . . .	. . . . .

978

		GATTTCACGGGGCTCAGAAAAAGCTGAGAGAAATGTGAATCATtaaaaaataaaagttctttt
1	D F D G A Q K K L R E C E S L K I K F F	
2	. . . . .	. . . . .
3	. . . . .	. . . . .
	cagagcaagtctggaattcgatatgtaaaccaagcagtcagtgattatggagatacat	
1	Q S K S G I R Y V N Q A V S G F M E I H	
2	. . . . .	. . . . .
3	. . . . .	. . . . .

1 R A A V G R P E G H R G L R G D P L E G
cGTGCCGCAGTCGGCCGACCTGAGGGCCACCGGGGTCTGCGGGGGGACCCCTCTGGAAGGT

AATGGATAAGTGACGAGCGGACGGGATGGCGAACAGACACAACACGAGAGACGAA

*
G
N

TGTTAGGACTGTTGCAAGTTTACTCAAAAAAATCAGCACACTCTTTTATATCATGTTTACAT
AAAGCATTTACATAAGACTTGGATAGATTCCAAAAAACAATAGGAGTTAGAAACACTCAGA
GCTTAGATCAAAAACATTTGTATACCAACCAGGTCAGGAAACCCTTGTCTCACATCCCTTG
TTTTAAGAACAGTTTGTAAACCATGAAATTAATTGAACCTTGGAAACCGCAGCAATACCTT
AAATATGTATCATAAACAGTCAGAGGTAATGCCTTAATATGTTTATAATATATGTTCTTTGC
CCCTGTCCTTACTTTTAGGATTTATCTCCAAATGTTTTATCCCTGTGCCTAAATAAA

FIG. 10

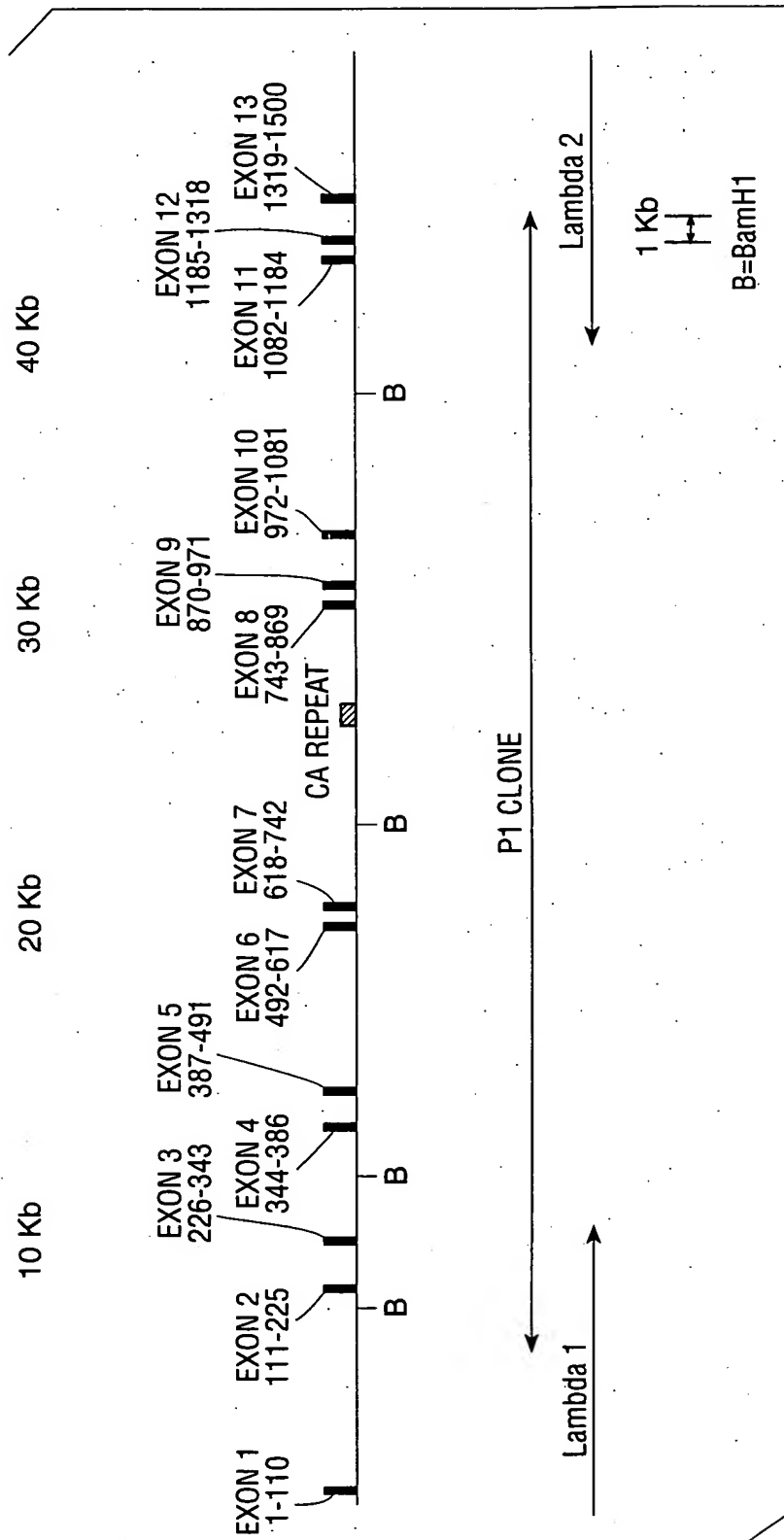


FIG. 11

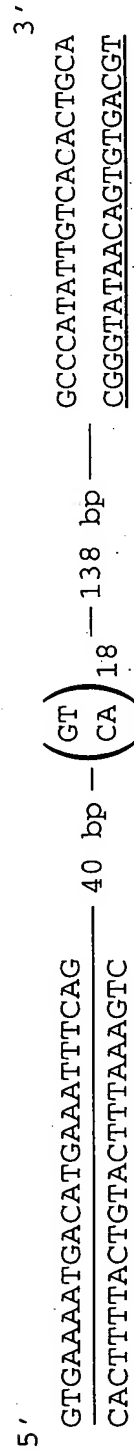


FIG. 12

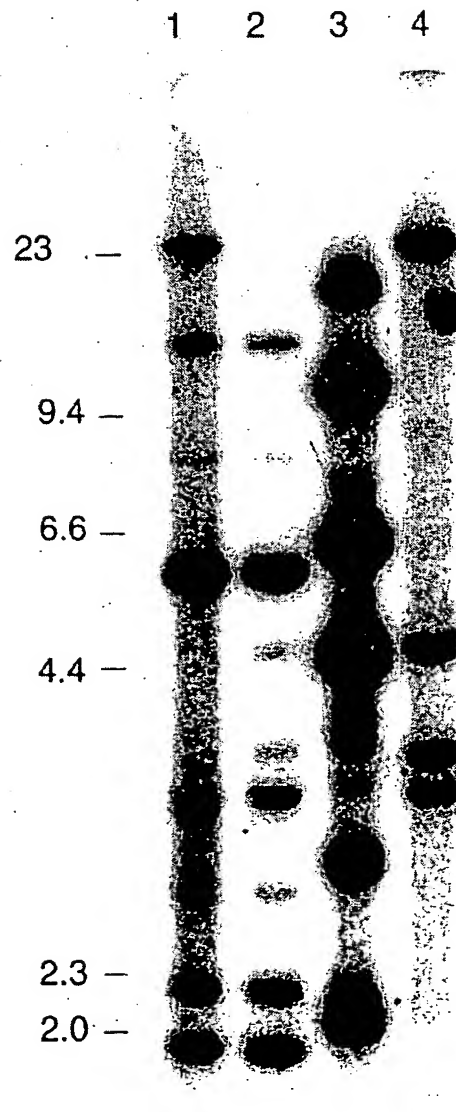


FIG. 13

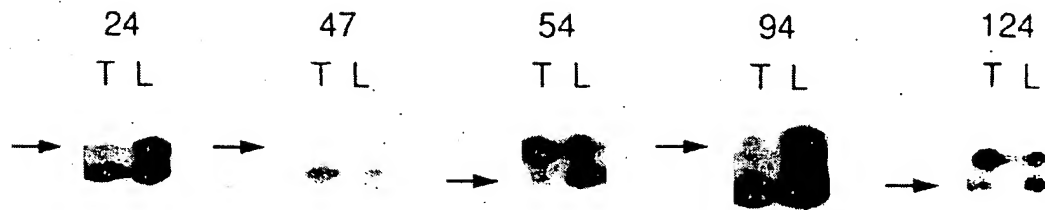


FIG. 14

5'			3'
<u>accaataaaagtttttagtgagcacag</u> <u>tggttattttcaaaatcactcgtgtc</u>	EXON 1	<u>gtgaggggggtctttgggcgc</u> <u>cactccccagaaacccgcg</u>	
<u>ttaatcagttttctttgggga</u> <u>aattagtc aaagaaacccct</u>	38bp EXON 2	<u>gtaagttttgtcattagaact</u> <u>cattcaaaacagtaatcttga</u>	
<u>tcttctgcatttttaattag</u> <u>agaagacgtaaaaattaatc</u>	EXON 3	<u>gtaaactcgtcttaattttg</u> <u>catttgagcagaattaaaac</u>	
<u>cttattttgtttctgtggcc</u> <u>gaataaaacaaagacaccg</u>	36bp EXON 4 11bp	<u>aaaaatattttaaagtgtcatg</u> <u>tttttataaaatttcaacagtac</u>	
<u>aattacaatgggggttttaa</u> <u>ttaatgttaccctaaaattt</u>	42bp EXON 5 42bp	<u>taggattcccttggttcttc</u> <u>atcctaagggaaccaagaag</u>	
<u>ttcaagagtattcacaaat</u> <u>aagttctcataagtgttata</u>	EXON 6	<u>gtgagttcgtctttttcaca</u> <u>cactcaagcagaaaaagtgt</u>	
<u>agttttctttatctcacct</u> <u>tcaaagaaatagagtggga</u>	36bp EXON 8	<u>gtaaaactaaaatatatattg</u> <u>cattttgatttttatataac</u>	
<u>ccgttgacttatttttacag</u> <u>ggcaactgaataaaaatgtc</u>	EXON 9	<u>gtaagtgtgaatttttattt</u> <u>cattcacacttaaaaaataa</u>	
<u>ttgttgtattttgtacatatag</u> <u>aacaacataaacatgtatatc</u>	EXON 10	<u>gtaagaacaccgtgatttgat</u> <u>cattcttgtggcactaaacta</u>	
<u>aaaactaagtttttagggcc</u> <u>ttttgattcaaaaatccggg</u>	35bp EXON 11	<u>gtgagtattatgttagctat</u> <u>cactcataatacaatcgata</u>	
<u>ttccctgtgtttccttttag</u> <u>aagggaacaaaaggaaaatc</u>	EXON 12	<u>gtaagaccacacatcttctat</u> <u>cattctggtgtgtagaagata</u>	
<u>gattttctttttgcatattttag</u> <u>ctaaagaaaaacgtataaaatc</u>	EXON 13	<u>tcttgctgtcagttttcttg</u> <u>agaacgacagtcaaaagaac</u>	

FIG. 15

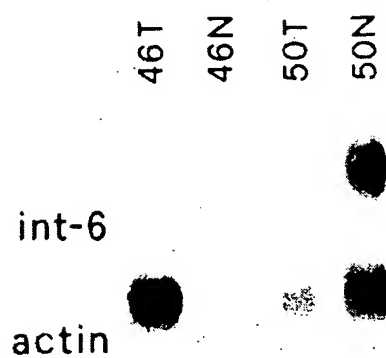


FIG. 16

